

AUSTRALIAN HESPERIIDAE. II.

NOTES AND DESCRIPTIONS OF NEW FORMS.

By G. A. WATERHOUSE, D.Sc., B.E., F.E.S.

(Two Text-figures.)

[Read 27th July, 1932.]

Since the first part of this series was published in These PROCEEDINGS in 1927, I have collected and received many more specimens of this family, especially from Western Australia, collected by F. L. Whitlock, so I can give additional information from that and other States.

The recent visit to Australia of Brigadier W. H. Evans, one of the world's authorities on the family, has added considerably to my knowledge, more especially of those species which have reached Australia from New Guinea. General Evans brought with him a large number of species from the Australian Region for comparison.

General Evans was in Australia for about two months, and a portion of nearly every day of this period we spent together in the examination of species of this family. We examined very carefully the extensive collection at the Australian Museum, Sydney, which now possesses my own collection, recently presented to that Institution. We also spent over a week in Adelaide and in the South Australian Museum examined the Lower collection of HesperIIDae and also the types from the Tepper, Guest and Lucas collections in that Museum. This study has brought to light many new facts and at the same time has confirmed many of the statements put forward in the "Butterflies of Australia" in 1914.

As a result of this work it has been decided that I should describe the new species and subspecies we found, leaving for the present the characterization of certain new genera which we have decided are necessary, but which require a fuller investigation by General Evans after he has examined the collections at the British Museum and elsewhere in England.

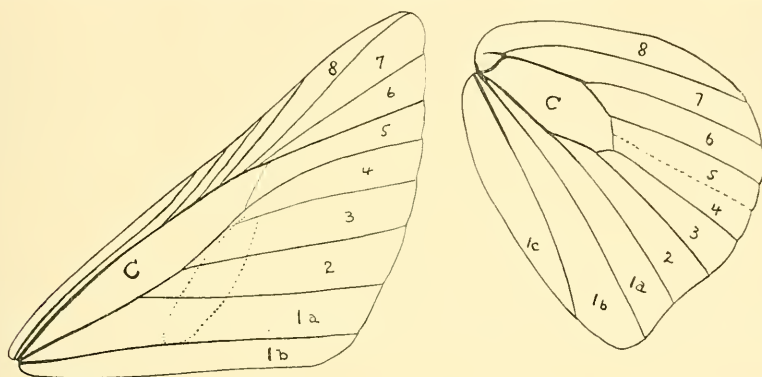
It has been necessary to nominate a type locality for many species, as in a number of cases this has been given by older authors in a very general way; even Lower in his papers usually omitted the locality of his type specimens, and in some cases did not even mark a specimen as type.

The names, unless alterations are made, are those of Waterhouse and Lyell (1914), modified in some respects as to the sequence of genera, as indicated in Waterhouse, 1927.

I adhere to numbers for the veins of the wings as this is a very convenient method. Should the student wish the names of the veins as in use through all the Orders of Insects, he is advised to consult Dr. R. J. Tillyard's "Insects of Australia and New Zealand", 1926. I have kept to the use of space 1a for the area above vein 1a, and 1b for the area below it in the forewing, and in the hind-wing spaces 1a, 1b and 1c in that order from vein 2, as I consider that this

method is clearer to understand. General Evans in his papers names these spaces the reverse way.

The scheme of markings on the wings of the Hesperiidæ is more or less of one pattern with modifications for the different species. The forewing usually has a spot in the cell, often hyaline, a streak along space 1b, a spot towards the base in space 1a never hyaline, an outer spot in 1a hyaline, usually a large spot in space 2 hyaline, another smaller in space 3, sometimes small spots in spaces 4 and 5 hyaline, very often three small subapical spots in spaces 6, 7 and 8 hyaline, these last spots running more or less at right angles to the costa. In the male there is often a sex brand on the forewing running from near the dorsum to near the base of vein 4; this brand varies in length and width in those species in which it occurs and is set at different angles in different species. It is unusual to find hyaline spots on the basal side of the brand. The underside of



Text-figure 1, showing the method used of numbering the spaces in forewing and hindwing. C = cell. Numbers of spaces 9 to 12 in forewing omitted.

the forewing is marked in a similar manner to the upperside but the sex mark is absent. The upperside of the hindwing often has a broad spot extending from vein 1a to vein 6 rarely hyaline, and there may be a smaller disconnected spot in space 6. The general colour of the underside of the hindwing is the same as the apical area of the underside of the forewing. There is usually a cell spot and often another in space 1a below it; the discal series of spots is between 1a and 6 and may be a straight band or a series of spots concentric with the termen; these spots may be irregular or nearly round and often have white or silver centres; sometimes there are smaller disconnected spots in spaces 6 and 7.

The new species and subspecies described in this paper have all been seen by General Evans, and he agrees that they are all worthy of names.

In addition to the very great assistance received from the South Australian Museum for the facilities given me in Adelaide, even allowing me to bring types to Sydney for comparison, I have to thank Messrs. F. L. Whitlock, L. Franzen, A. N. Burns, G. M. Goldfinch, J. Macqueen and A. L. Brown for many specimens. Unless otherwise stated the types are all in the Australian Museum, Sydney.

A list of the principal papers dealing with Australian Hesperiidæ is given on the concluding page. Many notes are given on the coloured figures in Seitz *Macrolepidoptera*. Many of the figures in this work are said to be taken from the hitherto unpublished figures of Plötz, and I am of the opinion that others

not so stated are from the same source. The figures of Plötz are usually too highly coloured and do not give an accurate representation of the insect. I have had for some years copies of the figures of the new Australian species described by Plötz.

Subfamily TRAPEZITINAE.

TRAPEZITES MAHETA Hewitson.

Hewitson's type is a male from Queensland and doubtless caught near Brisbane, the source of many of Hewitson's species. Two races, differing in the underside of the hindwing, can be recognized on the material available. I cannot recognize *obruta* Seitz, 1927, p. 1060, unless it be meant for *iacchoides* Waterhouse, as *maheta* seems to be constant in the number of silver spots on the hindwing below.

TRAPEZITES MAHETA MAHETA Hewitson.

Hesperia maheta Hew., *Ann. Mag. Nat. Hist.*, (4), 19, 1877, p. 80.

Males from Queensland agree with Hewitson's description of the underside: "Pale rufous grey, except the lower half of the anterior wing and the inner margin and anal angle of the posterior wing, which are dark brown." In Queensland males that I have seen, the underside is variegated with whitish-brown. In the female the underside is paler than in the southern race. Mr. L. Franzen has sent me specimens from near Brisbane in March and April.

TRAPEZITES MAHETA PRAXEDES Plötz.

Telesto praxedes Plötz, 1884, p. 378; *Trap. maheta*, Waterhouse and Lyell, 1914, p. 177, figs. 606-7, 614; *T. maheta*, Seitz, 1927, Pl. 167.*

Plötz states that his type is from Port Jackson (Sydney) and his figure agrees with Sydney specimens. In the male the underside of the hindwing is a uniform dark brown, excepting the usual silver and dark spots. In the female, the spot in 1a of forewing above is more heavily scaled than in the northern race.

ANISYNTA CYNONE Hewitson.

Hewitson's type is certainly a male, and from his description and figure is the race that occurs in South Australia. The species has only been caught in the autumn.

ANISYNTA CYNONE CYNONE Hewitson.

Cyclopides cynone Hew., 1874, fig. 17; *A. cynone*, Waterhouse and Lyell, 1914, p. 182, figs. 761-3; *Hesperilla gracilis* Tepper, 1882, p. 34, Pl. 2, fig. 7.

This race is distinguished by the rufous brown underside to the hindwing. The figure in Seitz, 1927, Pl. 171, is very poor, but probably represents this race.

ANISYNTA CYNONE GRISEA, n. subsp.

Astictopterus cynone, Anderson and Spry, 1894, p. 113.

This race, which occurs in Victoria, is distinguished on the upperside by being grey-brown rather than brown and the markings white instead of pale yellow. On the underside the apex of the forewing and the ground colour of the hindwing are distinctly grey-brown in contrast to the rufous brown of typical *cynone*. On the upperside of the forewing the spot in 1a is variable in size, there are always spots in 2 and 3 and usually smaller spots in 4 and 5, as well as the

* For list of references to papers on Australian Hesperiidæ, see concluding page.

three subapical dots. On the underside of the hindwing, the white spots are somewhat larger than in the typical race. Described from 6 males and 3 females from Kerang, in March, also recorded from Gunbower in April.

ANISYNTA ARGENTEO-ORNATA Hewitson.

Hewitson's type is a male from Swan River, W.A. Two races occur, all specimens from the mainland of Western Australia differing from those found on the islands off the coast.

ANISYNTA ARGENTEO-ORNATA ARGENTEO-ORNATA Hewitson.

Cyclopides argenteo-ornatus Hew., 1868, p. 41; Hew., 1874, figs. 18, 19; Seitz, 1927, Pl. 167.

In 1914, I had seen less than ten specimens from the mainland, but now have a long series taken at Bunbury by Mr. Whitlock in October and November, and I have caught it myself near Geraldton in September. In these the hindwing has on the underside a yellowish suffusion and the white spots are small and separate. The figure of the upperside in Seitz is good, but the figure of the underside is poor.

ANISYNTA ARGENTEO-ORNATA INSULA, n. subsp.

A. argenteo-ornata, Waterhouse and Lyell, 1914, p. 182, figs. 709, 710.

This chiefly differs from the mainland race above in that the spots of the forewing are somewhat paler and the cilia more chequered. On the underside the apex of the forewing and the ground colour of the hindwing are brown, the white spots of the hindwing in 1a to 6 are joined, forming a straight band which is extended in 1a towards the base and again extended in 7 towards the base, cell spot and spots in 7 and 8 are more elongated than in the mainland race. Described from 3 males and 2 females from Hermite Is., Monte Bello Group, in June. Specimens from East Wallabi Is. in November are similar. I have a female from Rottnest Is., near Fremantle, in October; there is a pair in the South Australian Museum from the same locality; these are much nearer this race than the typical race.

TOXIDIA SEXGUTTATA Herrich-Schaeffer.

This is a rare species; I have not seen more than fifteen specimens. The type is a female from Rockhampton. It was not represented in Lower's collection, the only specimen under that name being a female *T. crypsigramma* from Herberton in January. There are two races differing chiefly in the colour of the underside. The species varies in size. The brand of the male is narrow and extends from vein 1a to vein 3.

TOXIDIA SEXGUTTATA SEXGUTTATA Herrich-Schaeffer.

Hesperilla sexguttata H.-S., *Stett. Ent. Zeit.*, 1869, p. 80, Pl. 3, fig. 16.

Specimens of this race are larger than the northern race. A male from Gayndah has no spots on the upperside, indications of a pale discal band on the underside of the forewing. A female from Palmwoods in February has two subapical dots, quadrate spots in 2 and 3 and a faint spot above 1a on the forewing. Both on upper and undersides these two specimens are brown and are much darker than those found further north. Gen. Evans brought with him a male from Dawson River, ex Tring Museum, which has three subapicals, the upper

being very faint, and a very small dot in 3 and is somewhat paler than the Gayndah male.

TOXIDIA SEXGUTTATA SELA, n. subsp.

T. sexguttata, Waterhouse and Lyell, 1914, p. 191, figs. 641-2.

The holotype male has two distinct subapicals with a third in 8 indicated, spot in 3 and a narrow one extending across 2, and a spot indicated in 1a; hindwing above unmarked. On the underside the spots in 3 and 2 are well indicated; a second male agrees with the holotype except that it has only one subapical dot. The female has three subapicals, spots in 3 and 2 and a faint one in 1a. Both on upper and underside these three specimens are yellowish-brown and are more narrow winged than the typical race; they are from Banks Is., in February and March. In addition, I have a pair from Cairns, in February. The South Australian Museum has the following: A very small male from Groote Is., in February, a normal female same locality and date, and a female from Winchelsea Is., in April. These specimens are not in the best condition and for the present may be referred here, though in colour they approach the typical race.

MESODINA CROITES Hewitson.

Hewitson's type is a female from Australia and it was nearly 40 years before it was known to be from Western Australia. In 1914 I only knew this species from a coloured drawing of the type in the British Museum, a male from Carnarvon and a pair from Pindar. During the last few years Mr. F. L. Whitlock has taken a series from September to November at Bunbury, which show that the type probably came from the south and probably at no great distance from Perth. The Pindar pair certainly constitute a good race.

MESODINA CROITES CROITES Hewitson.

Cyclopides croites Hew., 1874, fig. 14; *M. croites*, Waterhouse and Lyell, 1914, p. 180, fig. 757.

The specimens from Bunbury usually have the brown markings on the underside of the hindwing more developed than in fig. 757. The orange spot of the hindwing on the upperside is very broad and sometimes encloses two brown spots. The only definite localities are Bunbury and Carnarvon (one male). Seitz (1927, Pl. 167) figures a female and not a male as stated.

MESODINA CROITES PINDAR, n. subsp.

M. croites, Waterhouse and Lyell, 1914, p. 181, figs. 755, 756.

Having now a series from the south-west, I have no hesitation in claiming subspecific rank for the pair taken at Pindar in July, described and figured in 1914. They differ chiefly in having the markings on the upperside much paler and on the hindwing the central spot smaller. On the underside of the hindwing the markings are almost obsolete.

MOTASINGHA DIRPHIA Hewitson.

Hewitson's type is a female from Swan River, W.A. (Perth). He afterwards described the male and figured it with the female from the same locality. This species has a very extensive range in Australia, as it is found in Western Australia, South Australia, Victoria and New South Wales. Semper records a female from Cape York, but this record either refers to another species or is a mistake. I

have much more material than in 1914 and can distinguish three races. In all the races, the female sometimes has on the upperside of the hindwing a round pale cell spot and more rarely two pale discal spots.

MOTASINGHA DIRPHIA DIRPHIA Hewitson.

Hesperilla dirphia Hew., 1868, p. 38; Hew., 1874, figs. 1-3.

The race from Western Australia is grey-brown on the upperside and the spots of the forewing are paler than in the other races, the male brand is usually broken up into five raised black streaks. On the underside of the hindwing the colour is variable, but is usually much darker than in the other races; except in one female (which has three) all my specimens have only one discal white spot. It flies in south-west Australia from October to December. I have recently received it from Bunbury.

MOTASINGHA DIRPHIA TRIMACULATA Tepper.

Hesperilla trimaculata Tepper, 1882, p. 32, Pl. 2, fig. 1 (male); *Hesp. quadrimaculata* Tepper, 1882, p. 32, Pl. 2, fig. 2 (female).

Tepper described the sexes from South Australia under different names. All my specimens have the spots on the upperside usually smaller than *dilata* and the colour of the underside of the hindwing is generally reddish-brown, usually with three white discal spots. In addition to Tepper's localities, I have seen specimens from Belair, Blackwood, Port Victor and Port Lincoln caught in October and November. I consider my specimens from Dimboola. Vict., belong here.

MOTASINGHA DIRPHIA DILATA, n. subsp.

M. dirphia, Waterhouse and Lyell, 1914, p. 195, figs. 628-630.

In this race, in both sexes the general colour on the upper side is more yellow-brown than in the other races, the spots of the forewing are much more irregular in shape, extending along the veins towards the termen; this is specially seen in the three subapical spots and the spots in 2 and 3 in the female. The male has the spot in 3, sometimes in 2, and the brand is usually continuous. The female has spots in 3 and 2 and usually two in 1a. On the underside of the hindwing the white cell spot is very prominent and ringed with brown-black, and there are at least three small white discal spots. I caught and bred this race at Waverley, near Sydney, from October to December, but owing to settlement its foodplant has been destroyed; but it can now be found near Long Bay. I have it also from the Blue Mts., near Blackheath.

MOTASINGHA ATRALBA Tepper.

This species belongs to the older fauna of south-western Australia and has no close representative in eastern Australia. At least three distinct races can be recognized.

MOTASINGHA ATRALBA ATRALBA Tepper.

Hesperilla atralba Tepper, 1882, p. 33, Pl. 2, fig. 5; *M. atralba atralba*, Waterhouse and Lyell, 1914, p. 195, fig. 649.

The male of this subspecies has a very narrow and obscure brand, extending from vein 1a to vein 3, and is not always easy to see, especially in the field. The type is a female from Ardrossan, on the western shore of St. Vincent's Gulf, S. Aust., and is now in the South Australian Museum, only the forewings

remaining. In both sexes, there are sometimes two additional white spots in 1a, the termen of the forewing is more convex than in the other races, the cilia are markedly chequered and the underside of the hindwing is grey with obscure grey-brown rings.

I have found larvae and pupae of this race on *Gahnia lanigera* at Port Noarlunga, S. Aust. The egg is large, greenish, very faintly marked with numerous fine ribs and elliptical in longitudinal section, height about equals the smaller width. The larva, which resembles that of *M. dirphia*, makes a tent by drawing the leaves of the foodplant together, remaining inside, head downwards, during the day and feeding at night. It pupates in this shelter, fastened by the tail, head downwards, but is without the silken pad below the head, as is the case with pupae of *M. halyzia* and *M. aeturopis*, which also pupate head downwards.

This race has been found in South Australia, at Ardrossan, Port Lincoln (Meyrick), Moonta in November, and Port Noarlunga in April. It probably has a spring and an autumn brood, as larvae I found in April, though nearly full grown, had not pupated by June.

MOTASINGHA ATRALBA DACTYLIOTA Meyrick.

Telesto dactyliota Meyrick, 1887, p. 831; *M. atralba dactyliota* Waterhouse and Lyell, 1914, p. 196, figs. 648, 773.

Meyrick described the sexes from Port Lincoln, S. Aust., and Geraldton, W.A., but his description of the male does not apply to the South Australian race as he mentions the very broad sex mark. The type locality of the race must therefore be Geraldton. Meyrick and Lower (1902, p. 71) sink the name under *atralba*.

I have not seen a specimen from Geraldton, all my specimens being from much further south, but they agree with Meyrick's description. The male has a very broad band between veins 3 and 1a, below 1a it becomes abruptly narrower, and almost reaches dorsum. My specimens are generally much larger than typical *atralba*, the spots smaller, the upperside of the hindwing with more greenish-grey scaling and the underside somewhat darker. My specimens are from Waroona, W.A., October to December and Stirling Ranges, W.A., in October.

MOTASINGHA ATRALBA NILA, n. subsp.

♂. Forewing smaller and darker than in *dactyliota* and the white spots much reduced in size, the holotype has no spot in 2, but two of six males have a trace of this spot; the band is not so broad as in *dactyliota*, extends from above vein 3 and is only represented as a streak below 1a, but in some specimens this portion is wider. The hindwing is yellowish-brown and is almost devoid of greyish scaling over the ground colour. On the underside the wings are very much darker than in the other races and the apex of forewing and the hindwing are yellowish-brown, with the usual markings very obscured.

♀. Much larger than male, with spots larger and a double white spot in 1a upper small or absent. Underside as in male.

I have only seen specimens from Dirk Hartog Island, W.A., caught by F. L. Whitlock on 10th Aug., 1920. Types and paratypes in Australian Museum and one of the series sent to the British Museum. This race, as with others, shows that butterflies from the islands off the coast of Western Australia are somewhat different from those occurring on the mainland.

MOTASINGHA DOMINULA Plötz.

The locality given for this species is Tasmania. In 1914 I had only two small Tasmanian males from Mt. Magnet, which did not agree with the unpublished coloured figure of Plötz, of which I had a copy. I was then inclined to think the locality incorrect. Since 1914 I have seen a number of authentic Tasmanian specimens as large as his figure and agreeing fairly well with it and with his description. I now consider the mainland race distinct and also the small mountain race found in Tasmania. The number of spots on the forewing above is variable in both sexes, in all the races, the male brand is broad and consists of two parts, the outer is dull black and the inner jet black.

MOTASINGHA DOMINULA DOMINULA Plötz.

Telesto dominula Plötz, 1884, p. 379; *M. dominula* Seitz, 1927, Pl. 168.

This race is distinguished from the other two by its reddish-brown underside and the spots of the underside of the hindwing being typically dull white, and from the mainland race by the much larger spots, those on the disc forming a broad band only partly divided by the veins. I have seen several specimens from Billop, near Longford, in February, and have it also from Baghdad in December. These localities are not more than 1,000 feet elevation.

MOTASINGHA DOMINULA PRIA, n. subsp.

This is a very small mountain race and is grey-brown on the upperside and the markings are usually very small, the underside of the apex of the forewing and the ground colour of the hindwing are yellowish-brown. The underside of the hindwing has the silver band only faintly divided by the veins, the portion in 1a is narrower than the remainder. The type male has the subapical dots very small, a small spot in 3, a faint mark in cell and a minute spot in 3 of hindwing above. My series is from Cradle Mountain, Tas., at about 5,000 feet, in January, caught by Dr. Tillyard and Mr. G. H. Hardy. The Mt. Magnet males may be referred here.

MOTASINGHA DOMINULA DRACHMOPHORA Meyrick.

Telesto drachmophora Meyrick, *Ent. Mo. Mag.*, 1885, p. 82; *M. dominula*, Waterhouse and Lyell, 1914, p. 197, figs. 764-6.

This, the mainland race, is almost as large as the typical race and the general colour of the underside is almost the same as *pria*. The silver band on the underside of the hindwing is not continuous, but broken up into spots and that in 7 is rarely silvery, sometimes dull white, sometimes wanting. From northern localities the spots of hindwing are silvery, from Mt. Kosciusko they are sometimes dull white. A common species in January and February at an elevation of over 4,000 feet at Kosciusko, Barrington Tops and Ebor, N. S. Wales; not yet recorded from Victoria. The locality, Newcastle, is an error.

HESPERILLA CHRYSOTRICHA CYCLOSPILA Meyrick and Lower.

Telesto cyclospila Meyrick and Lower, 1902, p. 63; *Hesp. chrysotricha leucospila* Waterhouse, 1927, p. 280, Pl. 26, figs. 25-28.

Having recently examined all the specimens of *cyclospila* in the Lower collection at the South Australian Museum, together with my types of *leucospila*, I must sink my name as a synonym. In 1910, Lower lent me a male and a female from Port Lincoln, S. Australia, which were labelled types, and also a

male from Melbourne. It was evidently intended that Port Lincoln should be the type locality, but the description of the male refers only to the Melbourne specimen in that there are seven spots on the underside of hindwing, whereas the two Port Lincoln males, including the specimen marked as type, in the Lower collection have only six spots. As the written description must be preferred to the labelled specimen, Melbourne must therefore be the type locality of *cyclospila*, though Victorian specimens do not all show seven discal spots. For the present it is best to consider that both Victorian and South Australian specimens should be kept under *cyclospila*. I have recently received specimens from Mr. A. N. Burns and Mr. A. L. Brown bred in November and December from Frankston, Victoria.

HESPERILLA DONNYSA Hewitson.

This species has a greater range than any other of the subfamily. I have now specimens from S. Queensland (one male), many localities in New South Wales and Victoria, from Tasmania and South Australia and from Bunbury and Geraldton in Western Australia. Though most of the specimens from New South Wales and eastern Victoria are similar, from other localities there are good geographical distinctions. In These PROCEEDINGS (1927, pp. 278-280) I reviewed this species and described three new races. In that paper I was rather doubtful where to place the South Australian specimens that were known. A further examination of the specimens in the South Australian Museum and in my own collection shows that races of *donnysa* and *chrysotricha* are found in South Australia. The race from there is not so well differentiated, but cannot be placed with either *flavescens* on the east of it or the Western Australian race on the west.

HESPERILLA DONNYSA DILUTA, n. subsp.

In These PROCEEDING for 1927 I was inclined to consider that *cyclospila* Meyrick and Lower (1902, p. 63) should be the name applied to this, the South Australian race of *donnysa*, but I am now convinced that that name belongs to the race of *chrysotricha* found in Victoria and possibly South Australia. The male *diluta* has the three subapical dots of the forewing paler than the other spots, the cell spot large, spots in 2 and 3 and two spots in 1a, the lower being the larger, yellowish hyaline. The spot on hindwing above is dull yellow. The underside of the hindwing is dull red-brown. Two of the three females have whitish dots in 4 and 5 of forewing on upperside, and the lower spot in 1a is very large and the small spot above it almost touches it. This race approaches the race *flavescens*, but it has not nearly the same amount of yellowish scales above and is much darker beneath. My specimens are from Goolwa, South Australia, in March. It is represented in the South Australian Museum by two males from Sheringa in October, one female from Goolwa in March, and one female from Adelaide in November.

HESPERILLA DONNYSA ALBINA, n. subsp.

This race is separated from the others in having the spots in 2 and 3 and the subapicals of the forewing whitish instead of yellow. In general it is much darker on upper and undersides. It occurs in the same localities as *H. chrysotricha* and on the upperside the females are very similar, so much so that in 1914, the only specimen of this race we had was selected for fig. 776, without examining the underside. In *chrysotricha* the underside is distinctly reddish, usually with silver spots on the hindwing. In *albina* the underside is brown with dark dots. It is

easy to distinguish the males on the upperside and the genitalia of the two are markedly different. This race has been caught at Bunbury in October and November by Mr. F. L. Whitlock and must be very rare as, after a long search, he has only taken three males and four females. I have one female from Waroona and one from Stirling Ranges.

HESPERILLA IDOTHEA Miskin.

Miskin's type is a female from Victoria in the South Australian Museum from the Lucas collection. Though the species has a wide range at an elevation in New South Wales, Victoria and Tasmania, the material available does not indicate races, except in the case of South Australian specimens.

HESPERILLA IDOTHEA IDOTHEA Miskin.

Trapezites idothea Miskin, 1889, p. 152; *Trapezites dispar* Kirby, *Ann. Mag. Nat. Hist.* (6), 12, 1893, p. 435; *Hesp. idothea*, Waterhouse and Lyell, 1914, p. 187, figs. 716-8.

This race has, in the male, an obscure central suffusion on the upperside of hindwing and three black dots on the underside. Most authors have overlooked the fact that Kirby's description of *dispar* includes both sexes and the female is a direct synonym of *idothea*, both being from Victoria.

HESPERILLA IDOTHEA CLARA, n. subsp.

The male differs from the typical race in being larger and having a well developed elongate pale orange spot on the upperside of hindwing and an unmarked underside. I have two males from Mt. Lofty, S. Aust., caught in November by Mr. F. M. Angel; both have the cell spot of forewing curved, the type has the spot in 2 minute, in the other it is slightly larger. The South Australian Museum has specimens from the same locality in November and December. The female of this race is unknown.

Subfamily PAMPHILINAE.

This is the more appropriate name for this subfamily, and not Erynninae.

As a result of my work with General Evans and the examination of many hundreds of specimens of the species, together with the help of the numerous species and subspecies he brought from the islands to the north of Australia and elsewhere, I am convinced that there are more species than I had formerly admitted. The treatment of such species as *P. flavovittata* and *A. augias* in 1914 requires considerable modification, as I had considered that each name applied to a single extremely variable species. As Lower anticipated, several of our species become races of species earlier described from the Oriental Region.

It is very noticeable that, in this subfamily, there are found in the different genera very closely related pairs of species. In some cases these can be recognized by the different sex brand in the male and in others by the different genitalia. By earlier authors these characters were usually omitted in their descriptions, so it is not always easy to determine what species is meant. With females the problem is much more difficult. For some years I have been gathering together large series from as many localities as possible, so the problem has been somewhat simplified. In the case of the commoner species some hundreds of specimens were examined in the collections of the Australian Museum, Sydney, and the South Australian Museum, Adelaide, and either General Evans or I also this

year studied the specimens in the National Museum, Melbourne, and the Queensland Museum, Brisbane. Messrs. L. Franzen and A. N. Burns have kindly given or lent many specimens of the rarer species of this subfamily.

TARACTROCERA Butler.

Catalogue Fabrician Diurnal Lepidoptera, p. 279, 1869.

This genus was separated by Butler on account of the very peculiar antennae, which have a flattened excavated club, somewhat spoon-shaped, and at most a minute apiculus. All the species are small, and throughout the Oriental Region constitute a very compact group distinguished by their peculiar antennae. In many cases an examination of the antennae is necessary to distinguish them from species of the genus *Padraona*.

In Australia, two sections are found, one represented by the common *T. papyria* Boisd. and its western race *agraulia* Hew., with a straight sex brand in the male; no allied species has been found beyond Australia. The other section, with orange markings, with sex brand of varying shapes or absent, contains species that are much rarer in Australia and have a very general resemblance to species of *Padraona*. They are probably not so rare as the numbers in collections would lead one to suppose, but are passed over in the field for the much more common species of *Padraona*. Collectors are advised to catch longer series of these small forms, for their efforts are sure to be well rewarded.

T. bavius anisomorpha has a general resemblance to *P. hypomeloma vaga*, *T. ina* to *P. hypomeloma hypomeloma*, *T. udruka ilia* to the northern races of *P. flavovittata* and *P. hespera*. The species of *Taractrocera* are not easy to distinguish from each other; the sex brand should be examined first of all. The females are much more difficult. Lower, when he described *T. anisomorpha*, included as sexes males of two distinct species.

TARACTROCERA DOLON Plötz.

Apauustus dolon Plötz, 1884, p. 165; *T. dolon*, Lower, 1911, p. 144; *T. dolon*, Waterhouse and Lyell, 1914, p. 201, figs. 876-7; *Bibla dolon*, Seitz, 1927, p. 1076, Pl. 170.

This is a small brown and pale orange species without a straight brand in the male but with raised sex scales over veins 1a, 2 and sometimes below 3. I have never been satisfied that the species known as *dolon* in Australia has been correctly named. Seitz undoubtedly copies the figure of Plötz, which shows the small brown rings on the underside of the hindwing as mentioned by Plötz. There is no Hesperid that agrees with this and it is possible that Plötz either had an aberrant specimen or wrongly drew it and then described from his coloured drawing. Otherwise the description and figure agree with the species as here determined. General Evans has the species from Sudest Is., but otherwise it is not recorded beyond Australia. All my males have the subapical spots of upperside of forewing joined and not divided by darkened veins. As it is a pale species it is probably passed in the field as a worn specimen of another species.

TARACTROCERA INA, n. sp.

♂. Upperside dull brown with orange markings; forewing with cell almost wholly orange and not connected with the three elongated subapical spots which are divided by darkened veins; spots in 5 and 4 one-third size of those in 3 and 2

and nearer termen; spot in 1a bent towards base; streak in 1b; no sex brand or raised scales on veins. Hindwing with a round spot in cell and band from 1a to 6, but in no specimen seen a spot in 6. Underside orange-yellow, with lower half of forewing brown-black and markings of upperside reproduced.

The holotype is from Port Darwin and is in the South Australian Museum from the Lower collection. It is the specimen that Lower described as the female of his *T. anisomorpha* and labelled so. It was very carefully examined by General Evans, Mr. Tindale and myself and is certainly a male. In general appearance it is somewhat like *T. dolon*, but is larger, the colour is clearer, the forewings are more pointed, has the subapicals divided by dark veins, lacks the raised sex scales and has different genitalia. I am uncertain if I have seen any females, but may possibly have included them amongst my specimens of *anisomorpha*.

I have seen seven males, the holotype from Port Darwin, a male from Port Darwin in May, now in the British Museum, two from Mackay (Burns) in March and April, one from Westwood (Burns) in September, one from Yeppoon (A. Musgrave) in October and one from Atherton in February.

TARACTROCERA BAVIUS ANISOMORPHA Lower.

Bibla anisomorpha Lower, 1911, p. 146; *T. anisomorpha*, Waterhouse and Lyell, 1914, p. 201, figs. 883-4.

General Evans considers that *anisomorpha* should stand as a race of *T. bavius* Mabilie (*Bull.* Soc. Ent. Belg.*, 1891, p. clxxxvi) from Timor. The female from Port Darwin described and marked as type female by Lower is a male of *T. ina* and is now the holotype of the latter species.

Additional localities to those given in 1914 are Port Darwin in May; Roper River in April, June and November; Fortescue River, N.W.A., and Gayndah, in the South Australian Museum; Burnside, N.A. in April, in the Australian Museum; Westwood, Qld., in January, February, September, November and December (A. N. Burns), and Mackay in March (A. N. Burns).

TARACTROCERA UDRAKA ILIA, n. subsp.

♂. Upperside of forewing brown with orange markings; cell and costal area above orange and joined to the large subapicals which are not divided by darkened veins; the subapicals together form a larger subapical spot than in any of the allied species, and are also joined to the broad orange discal band. Sex brand consisting of brownish scales irregularly bordering the internal edge of discal band from vein 1a to vein 4. Hindwing brown with orange cell spot and orange discal band. Underside dark brown with the orange spots of upperside reproduced.

Female as in male without brand, cell spot not joined to subapical spot and discal band broader.

This species is easily distinguished from its allies by its smaller size, squarer wings and broader orange markings.

A series of four males and two females from King River, N. Aust., in January, in Australian Museum, Sydney, and National Museum, Melbourne, in which the cell spot in the male does not always join the subapicals. Also in the South Australian Museum, a male from Port Darwin in November, which bears a label in Lower's handwriting, "*T. flavoguttata* Plötz male" and a female from Melville Is.

This is an entirely new record for Australia. Typical *T. udraka* Fruhstorfer is from German New Guinea (*Iris*, 1910, p. 96).

* Frequently quoted as *Comptes Rendus Soc. Ent. Belg.*

PADRAONA Moore.

Lepidoptera of Ceylon, i, p. 170, 1881.

Species at present placed in this genus are somewhat divergent and the genus may eventually be divided. In most species there is a straight sex brand in the male, in *lascivia* and *ardea* this is replaced by raised scales on the veins. The clubs of the antennae are not flattened and there is a distinct apiculus.

PADRAONA ARDEA HETEROBATHRA Lower.

Apaustus heterobathra Lower, 1908, p. 316; *P. heterobathra* Lower, 1911, p. 154; *P. heterobathra*, Waterhouse and Lyell, 1914, p. 202, fig. 872.

This is the Australian race of *Ocybadistes ardea* Bethune-Baker (*Ann. Mag. Nat. Hist.*, (7), 18, 1906, p. 343) from Fak Fak, Dutch New Guinea. Though the male has no continuous brand, there are raised scales over vein 1a, on either side of vein 2 and below 3. Lower's types are from Kuranda.

PADRAONA HYPOMELOMA Lower.

Lower described both sexes, but his locality note (1911, p. 153) is badly punctuated and should read: Herberton and Kuranda, Queensland, in March, one female specimen (Dodd); Roseville, near Sydney, two male specimens in April (Waterhouse). He added that the types were in Coll. Lower. The two specimens in his collection are a male from Herberton (31st Jan., 1911) and a female from Kuranda (March, 1907), the latter labelled type female. In my collection is a male from Roseville (4th April, 1904) with a label in Lower's handwriting, "*O. hypomeloma* type male". As I write the Herberton male and my Roseville male are before me. The Roseville male has the upper two of the five spots of the discal band of the forewing half the size of the remaining three and the small somewhat ovoid spot lying on vein 6 of hindwing well separated from the oblique band, as in Lower's description. The Herberton male has the spot in 5 of forewing one-third the size, and the spot in 4 two-thirds the size of those in 3, 2 and 1a and on the hindwing the spot in 6 is elongate and nearly touches the oblique band. There are other minor differences that show that the description was taken from the Roseville male, rather than the Herberton male, which Lower no doubt received after his description was written. As further evidence that Sydney is the type locality, I have a letter from Lower to me dated 20th April, 1911, in which he says: "I am sending the female *hypomeloma*. I have no male, so that your male will be the type male, my female the other sex. You will perceive the female came from Dodd." This species differs from all its allies in having a white streak along the dorsum on underside of hindwing and so far no races have been found outside Australia.

PADRAONA HYPOMELOMA HYPOMELOMA Lower.

Ocybadistes hypomeloma Lower, 1911, p. 152; *Padraona hypomeloma*, Waterhouse and Lyell, 1914, p. 204, figs. 584, 873-4.

This race is typically from near Sydney, the subapical spots of the forewing are small, sometimes, as in the holotype male, just touching the costal streak, but usually some distance from the discal band. On the hindwing, the spot in 6 is small and separate from the discal band. On the upperside only, the female approaches the female of *P. lascivia*. I have recently taken a female at Port Macquarie in November and have seen specimens from Brisbane in March, April and September. I have also a female from Lindeman Is., in September, and a

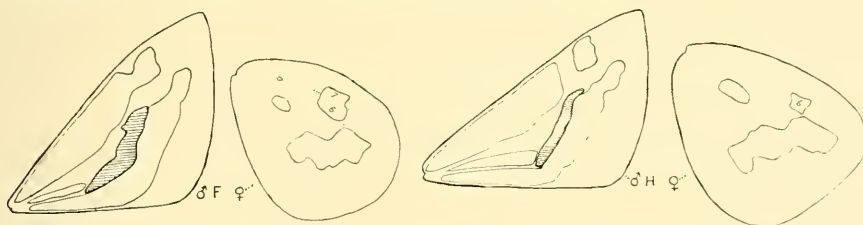
pair from Great Palm Is. in May. These specimens, as well as those from Kuranda and Herberton, only differ slightly from Sydney specimens.

PADRAONA HYPOMELOMA VAGA, n. subsp.

This race differs from that caught at Sydney in having the markings on the upperside much broader and bright orange and the underside darker. The holotype male has the subapical spots of forewing elongated and joined both to the costal streak and the discal band. On the hindwing, the spot in 6 is large, joins the discal band and is also extended into 7. My two other males have subapicals elongated, but not so closely joined to the discal band in the forewing and the spot in 6 of hindwing just touches the discal band. I have only one female which has correspondingly brighter and broader markings than the typical race and on the hindwing the spot in 6 joins the discal band and extends into 7. The four specimens are from Prince of Wales Is., in May and June (H. Elgner). Types in Australian Museum, KL 07893.

PADRAONA FLAVOVITTATA Latreille. Text-fig. 2, F.

The use of this name for several distinct Australian species has caused considerable confusion, and, as it is the earliest name given for a small yellow-banded Pamphiline species, it is desirable that the position should be made quite clear. The original description itself might well, without other evidence, be sufficient for at least half a dozen Australian species.



Text-figure 2.—Enlarged sketches of forewing of male showing sex brand shaded and outline of orange markings and underside of female with outline of spots. F = *Padraona flavovittata*; H = *Padraona hespera*, n. sp.

Latreille described *flavovittata* in 1824 from several specimens from Australia received from Alexander Macleay, that is before Macleay left England for Sydney. Macleay had been receiving butterflies from Australia for some time previously and such species as *Papilio aegeus* in 1805, *Papilio macleayanus* and *Heteronympha banksi* in 1814 were described from his collection. At that time these species could only have come from Sydney, and there is little doubt that the specimens of *flavovittata* were also from Sydney.

In 1832, Boisduval (*Voy. Astrolabe*, Lep., p. 165) quotes Latreille's description of *flavovittata*, and on the next page describes a new species *papyria* from Australia. As Mr. N. D. Riley points out (*Trans. Ent. Soc. Lond.*, 1926, p. 239), Boisduval must have seen Latreille's specimens when he wrote and could not have confused these two insects. Felder several times mentions the name *flavovittata* in comparison with larger species he was describing and always indicated it was a species with prominent orange markings.

Kirby in his catalogue apparently was the first to use the genus *Taractrocera* for this name, on what grounds cannot be ascertained. Plötz (1884, p. 164-5)

placed species belonging to both *Taractrocera* and *Padraona* in the genus *Apaustus*, listing No. 56 as *maro* with *flavovittata* as a synonym, No. 57 *sunias* from Cape York, No. 58 *alix*, n. sp., from Australia, the last being a synonym of *papyria*. He mentions *agraulia* (p. 166) as unknown to him, and as far as I can ascertain omits *papyria* altogether from his writings.

Miskin in his catalogue marked the name *flavovittata* as unknown to him and applies the name *agraulia* Hew. with *sunias* Felder as a synonym, to the eastern species. Olliff also used *agraulia* for the eastern *Padraona*, but Semper, used *flavovittata*.

When I began collecting in 1893, the name *agraulia* Hew., though described from Western Australia, was used for the eastern *Padraona* and the name *flavovittata* for the western race of *T. papyria*, that is the true *agraulia* of Hewitson. Who was responsible for this usage is now doubtful. Meyrick and Lower (1902, p. 100) use *flavovittata* for the western race of *T. papyria* and (p. 101) *sunias* Felder for the eastern *Padraona* with *walkeri* Heron and *agraulia* Hew. as synonyms (including at least two distinct *Padraona* under *sunias*). Lower (1911, p. 146) uses *flavovittata* with *agraulia* as a synonym for the western *Taractrocera*, and listed three species of *Padraona* from the east, viz.: *walkeri*, *rectivitta*, and *sunias*.

In 1914 (Waterhouse and Lyell, p. 203) it was pointed out that the name *flavovittata* should be used for the common *Padraona* from Sydney and that the type must have come from Sydney. Riley (l.c., p. 239), after an examination at the Paris Museum, fully agreed with this opinion. Further confirmation is now available, as General Evans has seen, in the Oberthur collection at Rennes, France, an eastern male with a broad sex brand with Latreille's label *flavovittata*. I have little doubt that this specimen is one of Latreille's original series, given by him to Boisduval and later acquired by Oberthur with other species from Boisduval's collection.

The position is further complicated, since General Evans has clearly proved to me that there are two very common closely allied species of *Padraona* flying together at Sydney. We found them both commonly in my garden at Killara, and at several other localities near Sydney.

These two species can be distinguished in the male by the size and shape of the sex brand on the forewing. The presence, in the Oberthur collection, of the male with broad sex brand at once settles the species to which the name *flavovittata* applies.

Besides the broad sex brand, in the male *flavovittata* the cell spot is usually joined to the subapicals and the underside of the hindwing is greenish. In the female, besides the greenish underside, there is a spot in 7 immediately above that in 6 and usually another in the base of 7.

Three races are known, and as it is now impossible to know what species previous authors had before them, few references are given.

PADRAONA FLAVOVITTATA FLAVOVITTATA Latreille.

Hesperia flavovittata Latreille, Encyclopédie Méthodique, ix, p. 768, 1824; *Ocybadistes walkeri*, Lower (in part), 1911, p. 148; *P. flavovittata flavovittata*, Waterhouse and Lyell (in part), 1914, p. 203, fig. 859.

The male has the sex brand broad and inwardly incurved in 1a. and stops at vein 4; the orange subapical spot is usually joined to the orange cell spot. On the underside the hindwing is greenish, more pronounced in fresh specimens.

The female is also greenish on the underside and on the hindwing the spot in 6 is separated from the discal band and there is another above it in 7 and also a small spot in the base of 7.

The description given by Lower (1911) under *walkeri* refers on the upperside to *hespera*, as the brand is described as narrow and nearly straight, but the underside being greenish refers to *flavovittata*. In the "Butterflies of Australia" (1914) the description and fig. 859 of the male apply to this species, but fig. 866 is a female *hespera*. This race is found from Brisbane along the coast of New South Wales, typically from Sydney, also in Tasmania, but is absent from Victoria. In the warmer parts it is found throughout the year.

PADRAONA FLAVOVITTATA WALKERI Heron.

Ocybadistes walkeri Heron, *Ann. Mag. Nat. Hist.*, (6), 14, 1894, p. 106.

This is a smaller and brighter race described with a broad sex brand in the male from Dammer Is. and Port Darwin, and is found as well along the Queensland coast from Claudie River to Rockhampton. The description and figures (Waterhouse and Lyell, 1914, p. 203, figs. 858, 865) refer to the corresponding race of *hespera*.

PADRAONA FLAVOVITTATA HYPOCHLORA Lower.

Ocybadistes walkeri var. *hypochlora* Lower, 1911, p. 149; *P. flavovittata hypochlora*, Waterhouse and Lyell, 1914, p. 204, figs. 860, 867.

This race is larger, paler, the yellow orange markings much broader and the markings on the underside somewhat obscured. The sex brand, as in the other races, is broad. It has only been found near Adelaide, from November to April.

PADRAONA HESPERA, n. sp. Text-fig. 2, H.

In the male this species and its races can be distinguished from the very similar *flavovittata* by the narrow sex brand extending above vein 4 and being almost at right angles to vein 1a, making a definite break between the discal band and the streak in 1a; the orange cell is not joined to the subapical spot. On the underside it is never greenish, not even in bred specimens, but excepting the lower half of the forewing, is orange-brown.

The female is similar to that sex of *flavovittata* but is smaller and squarer. The underside of the hindwing is brownish-orange, the spot in 6 is well defined and near the discal band and there is no spot in 7.

PADRAONA HESPERA HESPERA, n. subsp.

Ocybadistes walkeri Lower (in part), 1911, p. 149; *P. flavovittata flavovittata*, Waterhouse and Lyell, 1914, fig. 866.

♂. Upperside: Forewing brown-black with orange markings; cell spot large, occupying all the cell and extending above to costa; subapical spot large and well separated from cell spot and discal band. Sex brand straight, narrow, black from vein 1a to above vein 4 and not inwardly incurved in 1a. Pale orange streak in 1a. Hindwing brown-black with orange markings, cell spot ovoid, sometimes extended towards base, discal band irregular with a small separate spot in 6.

Underside markings as above, but somewhat obscured; brownish-orange (never greenish) excepting the lower half of forewing.

Female as in male with broader wings and without sex brand.

Typical specimens are from Sydney and it is found as far north as Brisbane. I have seen specimens from Tasmania.

PADRAONA HESPERA VESTA, n. subsp.

P. flavovittata walkeri, Waterhouse and Lyell (*nec* Heron), 1914, p. 203, figs. 858, 865.

This, the northern race, bears the same relationship to typical *hespera* from Sydney as *walkeri* does to typical *flavovittata*. It is smaller and brighter and was described and both sexes figured from Port Darwin in 1914 as *walkeri*. Those specimens figured are now designated the types of *vesta*. It is also found on the Queensland coast from Cairns to Mackay.

PADRAONA LASCIVIA ROSENSTOCK.

The type is a male from Beaconsfield, Victoria, in the South Australian Museum from the Lucas collection. Further material from the north shows that there are two good races.

PADRAONA LASCIVIA LASCIVIA ROSENSTOCK.

Pamphila lascivia Rosenstock, *Ann. Mag. Nat. Hist.*, (5), 16, 1885, p. 378, Pl. 11, fig. 1; *Padraona lascivia*, Waterhouse and Lyell, 1914, p. 202, figs. 587-8.

Typically from Victoria but extends through coastal New South Wales to southern Queensland. Lower sent specimens to Mabilles who returned them as *neocles*.

PADRAONA LASCIVIA NEOCLES MABILLES.

Pamphila neocles Mabilles, *Bull. Soc. Ent. Belg.*, 1891, p. clxxvii.

The type is from Cooktown. Northern specimens are smaller and darker than those from the south, and the markings on the upperside have in some cases disappeared. The markings on the underside are better developed and the colour is deeper. Specimens from Cairns to Cape York belong to this race.

PADRAONA MARNAS AFFINIS WATERHOUSE AND LYLELL.

Ocybadistes affinis Waterhouse and Lyell, *Vict. Nat.*, xxviii, 1912, p. 227; *P. affinis*, Waterhouse and Lyell, 1914, p. 205, fig. 885.

General Evans has pointed out that the species that has passed as *marnas* in Australia for many years has been incorrectly determined. Though two *marnas*-like species occur in Australia and New Guinea, only one is found in the Moluccas, which is the type locality for *marnas* Felder. The less common *affinis* is then the race of *marnas* occurring in Australia. This is distinguished by the band on underside of hindwing being clear, untraversed by the veins. The Australian race differs from typical *marnas*, by having broader markings, particularly at the apex of the forewing. I have specimens from Palmwoods, Qld., taken by Mr. A. N. Burns in April. The holotype male was caught at Kuranda in June.

PADRAONA COLATTUS IRIS, n. subsp.

Telicota marnas, Meyrick and Lower, 1902, p. 103; *Ocybadistes marnas*, Lower, 1911, p. 148; *P. marnas*, Waterhouse and Lyell, 1914, p. 205, figs. 704, 886.

This is *marnas* of several Australian authors. Under the impression that this common species was Felder's *marnas*, the previous distinct species was described as *affinis*, which is, however, a race of true *marnas* from the Moluccas where only one species is found. The race *iris* has already been well described and figured. It is larger than the Australian *affinis*, the orange markings on the upperside are brighter and the band of the hindwing on the underside is divided by the darker

veins. The locality of the holotype is Kuranda, taken in June with two other males and a female. It is found from Mackay to Cape York.

CEPIHIRENES DOBBOE AUTOLEON Miskin.

Pamphila autoleon Miskin, 1889, p. 147; *Telicota aruana* Lower (*nec* Plötz), 1911, p. 160; *C. aruana autoleon*, Waterhouse and Lyell, 1914, p. 207, figs. 694-5.

In the Aru Islands there is a pair of very closely related species, *dobboe* Plötz (*Berl. Ent. Zeit.*, 1885, p. 227) and *aruana* Plötz (*Stett. Ent. Zeit.*, 1886, p. 103). An examination of these two species shows that *autoleon* is a subspecies of *dobboe* and not of *aruana*. The genitalia also confirm this.

ASTYCUS Hübner.

As Scudder had unfortunately selected *augias* Linn. as the type of *Astycus*, *Telicota*, to which Moore assigned the same species as type, must give way. After an examination of several hundred *augias*-like specimens, General Evans has convinced me that I was wrong in considering them all as one very variable species. These *augias*-like species are briefly distinguished below.

ASTYCUS AUGIAS ARGEUS Plötz.

Hesperia argeus Plötz, 1883, p. 227; *Telicota augias* var. i, Lower, 1911, p. 155; *T. augias kreffti*, Waterhouse and Lyell (in part), 1914, p. 208.

A paler species than its allies, with more pointed wings and in the male a broad pale sex brand and the yellowish colour extending from the discal band of the forewing along the veins to the termen. On the underside it is less heavily marked. Found from Port Darwin, throughout coastal Queensland and rarely to Sydney. *A. augias* does not tend to form well defined races in the Oriental Region, but as Plötz has separated the Australian race from Cape York, I retain the name here. I have it from Darwin, Banks Is., Cairns, Mackay, Brisbane and the Richmond River.

ASTYCUS KREFFTI Macleay.

Macleay's type from Cape York is a male and is preserved in the Australian Museum, Sydney. The sex brand is slightly narrower than in *augias* and it is a much brighter species. It seems to have developed two races, which overlap from Kuranda to Mackay. They may, however, be distinct species. Probably *bambusae* from India and *pythias* from Java are races.

ASTYCUS KREFFTI KREFFTI Macleay.

Pamphila kreffti Macleay, *Trans. Ent. Soc. N. S. Wales*, 1866, p. liv; *Telicota augias kreffti*, Waterhouse and Lyell (in part), 1914, p. 208, figs. 703, 868.

A bright orange species occurring typically at Cape York, found commonly on the islands to the north, and southwards to Mackay. This is probably Lower's *augias* var. iii, 1911, p. 157. I have it from Port Darwin, Darnley, Murray, Banks, Prince of Wales Islands, and Cape York to Mackay.

ASTYCUS KREFFTI ANCILLA Herrich-Schaeffer.

Pamphila ancilla Herr.-Sch., *Stett. Ent. Zeit.*, 1869, p. 79; *P. olivescens* Herr.-Sch., *loc. cit.*, p. 79, Pl. 3, fig. 14; *Telicota augias* var. ii, Lower, 1911, p. 156; *T. augias kreffti*, Waterhouse and Lyell (in part), 1914, p. 208, figs. 683, 684, 702.

A larger and richer race with well developed markings on underside of hindwing, which is usually greenish in the female, on which the name *olivescens* is based. Typically from Rockhampton, but found along the coast from Kuranda to Sydney.

ASTYCUS MESOPTIS Lower.

Telicota augias mesoptis Lower, 1911, p. 157; *T. augias krefftii*, Waterhouse and Lyell (in part), 1914, fig. 869.

This species differs from *ancilla* in being darker on upperside, the markings orange-red and in the male a very narrow sex brand commencing from 1a beyond the middle towards the termen, instead of from the middle; the underside of the hindwing is ochreous with the markings fairly well defined. The female on the upperside of forewing has the basal area darkened. This species resembles the much smaller *A. brachydesma* Lower which has the underside very dark. Lower's types came from Kuranda and there are paratypes in the Australian Museum. It occurs from Cape York to Mackay.

ASTYCUS ANISODESMA Lower.

Telicota anisodesma Lower, 1911, p. 157; *T. anisodesma*, Waterhouse and Lyell, 1914, p. 211, figs. 701, 862.

In the male this species has a general resemblance to *ancilla*, but is much larger. The holotype, now in the South Australian Museum, was caught at Ballina, N. S. Wales, by myself. So far the female is undescribed and I am indebted to Mr. L. Franzen for my first specimens. The late Mr. R. Illidge had several specimens in his collection which he had identified as *A. ohara* Plötz.

♀. Upperside dark reddish-brown with orange-red markings. Forewing with a faint spot in cell; two subapical dots with sometimes a trace of a third; discal band of moderate spots, that in 1a narrow, spots in 2 and 3 and a dot in 4 which is sometimes absent. Hindwing with discal band narrow and divided by darkened veins.

Underside: Apex of forewing and hindwing dark olive-brown with markings of upperside reproduced, but paler, and band of hindwing almost obscured.

The female differs very much from the male and has a general resemblance in size to females of *A. ohara* and *Cephrenes sperthias*, but can readily be separated by the underside, though it certainly approaches the female of *ohara* above. The only authentic specimens I have seen, have been caught between Brisbane and Ballina from November to March.

ASTYCUS EUROTAS EURYCHLORA Lower.

Telicota eurychlora Lower, 1908, p. 314; *T. eurychlora*, Waterhouse and Lyell, 1914, p. 210, figs. 692-3, 861.

General Evans, who has seen the type of *eurotas* Felder in the Tring Museum, has shown me a specimen from the Moluccas and the genitalia, which are very different from all other *Astycus*, agree with those of *eurychlora*, which must now rank as a subspecies of *eurotas*. Though an *augias*-like species, it can be recognized by the almost uniform orange-brown hindwing beneath. Specimens from North Queensland are not easy to tell from *ancilla* without an examination of the genitalia. The types are from Ballina; I have it from Port Macquarie, but it is rare. Two Herbert River specimens are slightly different, as are two males and a female from near Cairns.

BAORIS IMPAR Mabilles.

Pamphila impar Mabilles, *Bull. Soc. Ent. Belg.*, 1883, p. lxvi.

This species was described by Mabilles from a female from Australia or Oceania. General Evans considers that Mabilles's type came from New Caledonia and is the oldest name for a group of races: *bipunctata* Elwes and Edwards from the Moluccas, *contiguialis* Rothschild from New Guinea, Bismarcks and Solomons and *laraca* Swinhoe from Woodlark Is. The genus *Baoris* Moore has priority over *Parnara* for this species and its allies.

BAORIS IMPAR LAVINIA, n. subsp.

Parnara laraca Lower (*nec* Swinhoe), 1911, p. 162; *P. laraca*. Waterhouse and Lyell (*nec* Swinhoe), 1914, p. 211, figs. 743-4.

Colonel Swinhoe identified as *laraca* specimens from Port Darwin sent him by Lower, hence the use of that name in Australia. I have, through the kindness of General Evans, had an opportunity of seeing the various races and consider the Australian race worthy of a name. It is larger and not so dark as *laraca*, but smaller than *contiguialis*. The race has been well described and figured. The holotype male has the cell spot of forewing divided, the lowest of the three sub-apicals moved towards the termen, a small spot in 4, a larger one in 3, a much larger one in 2, all pale yellow hyaline, and a yellow spot in 1a equal in size to that in 2. On the upperside of hindwing there are small yellow hyaline spots in 2 and 3 and a trace of a spot in 6. The underside is suffused with ochreous scales. The allotype female is larger and is not suffused with ochreous on upper and under sides and is the specimen used for fig. 774. This pair were taken *in cop.* on 26th March, 1909, at Port Darwin by Mr. F. P. Dodd, and I have a series from the same locality from February to May and September to December. One male and two females from Banks Is. in February are larger and approach the New Guinea race.

BAORIS BEVANI Moore.

Hesperia bevani Moore, *P.Z.S.*, 1878, p. 688.

In the South Australian Museum there are three specimens of this widespread species from Port Darwin. It is distinguished from the allied species by the presence of the upper spot in cell of the forewing and the small spot in 4 being moved towards the termen. This is a new record for Australia and the species has probably been introduced, as its larvae feed on rice.

BAORIS ZELLERI CINNARA Wallace.

Parnara colaca, Waterhouse and Lyell, 1914, p. 212, figs. 778-9.

This is a very wide ranging species from the Mediterranean to Australia. The oldest name in the Oriental Region is *cinnara* Wallace. The only name given in the Australian Region is *urejus* Plötz from Amboina. The species Lower (1911, p. 163) gives as *P. colaca*, is *Baoris guttatus bada* Moore, which General Evans considers has been introduced into Australia.

Subfamily ISMENINAE.

HASORA KHODA HASLIA Swinhoe.

H. haslia Swinhoe, *Ann. Mag. Nat. Hist.*, (7), 3, 1899, p. 107; *H. haslia*, Waterhouse and Lyell, 1914, p. 216, figs. 725-6.

General Evans tells me that *Ismene khoda* Mabille (*Bull. et Ann. Soc. Ent. France*, 1876, p. xxv, and p. 263) from Isle of Pines, New Caledonia, is the oldest name for this group of species which range from India to New Caledonia.

PARATA ALEXIS CONTEMPTA Plötz.

Ismene contempta Plötz, 1884, p. 56; *P. chromus contempta*, Waterhouse and Lyell, p. 217, figs. 729-30; *Ismene lucescens* Lucas, *Proc. Roy. Soc. Qld.*, Vol. xv, 1900, p. 138.

The Fabrician name *alexis* has priority over *chromus* Cramer as the oldest name for this species. General Evans very carefully examined the long series in the Lower collection and is satisfied that the three species listed by Lower (1911, pp. 169-171) as *chromus* Cramer, *contempta* Herrich-Schaeffer and *contempta* Plötz are all the same insect.

Note.—In the *Genera Insectorum*, 1904, Mabille described two species with locality Australia, that I had not been able to recognize. General Evans has seen the types in the Oberthur collection and tells me that *Padraona suborbicularis* Mabille, p. 141, is a *Dalla* from South or Central America, and *Ocybadistes suffusus* Mabille, p. 142, is a common New Guinea and Aru Is. *Astycus* that has not been found in Australia. Both names now leave our lists.

References.

- ANDERSON and SPRY, 1894.—Victorian Butterflies, part ii, 1894, pp. 79-129.
- HEWITSON, 1868.—Descriptions of one hundred new species of Hesperidae. Part ii, 1868, pp. 25-56.
- , 1874.—Exotic Butterflies. Vol. v. Plate *Cyclopides* and *Hesperilla*. 1874.
- LOWER, 1908.—Descriptions of new Australian Hesperidae. *Trans. Roy. Soc. S. Aust.*, 1908, pp. 311-317.
- , 1911.—Revision of the Australian Hesperidae. *Trans. Roy. Soc. S. Aust.*, 1911, pp. 112-172.
- MEYRICK, 1887.—Descriptions of new Australian Rhopalocera. *Proc. Linn. Soc. N. S. Wales*, 1887, pp. 827-834.
- MEYRICK and LOWER, 1902.—Revision of the Australian Hesperidae. *Trans. Roy. Soc. S. Aust.*, 1902, pp. 38-129.
- MISKIN, 1889.—Descriptions of some new species of Australian Hesperidae. *Proc. Roy. Soc. Qld.*, 1889, pp. 146-154.
- , 1891.—Synonymical Catalogue Butterflies of Australia. *Annals Queensland Museum*, No. 1, 1891, pp. 1-82, and supplement.
- PLÖTZ, 1883.—Die Hesperiden-Gattung *Hesperia* Aut. und ihre Arten. *Stett. Ent. Zeit.*, 1883, pp. 26-64, pp. 195-233.
- , 1884.—Die Hesperiden-Gattung *Apaustus* Hübn. und ihre Arten. *Stett. Ent. Zeit.*, 1884, pp. 151-166.
- , 1884.—Die Hesperiden-Gattung *Ismene* Sw. und ihre Arten. *Stett. Ent. Zeit.*, 1884, pp. 51-66.
- , 1884.—Die Hesperiden-Gattung *Telesto* Bsd. und ihre Arten. *Stett. Ent. Zeit.*, 1884, pp. 376-384.
- SEITZ, 1927.—Macrolepidoptera of the World. Hesperidae by A. Seitz, 1927, pp. 1027-1107, Plates 163-175. English Edition.
- TEPPER, 1882.—The Papilionidae of South Australia. *Trans. Roy. Soc. S. Aust.*, Vol. iv, for 1880-1, pp. 25-36, Plates 2, 3, published Jan., 1882.
- WATERHOUSE, 1927.—Australian Hesperidae, part i. *Proc. Linn. Soc. N. S. Wales*, 1927, pp. 275-283, Plate xxvi.
- WATERHOUSE and LYELL, 1914.—The Butterflies of Australia, 1914, Hesperidae, pp. 172-224, figs. 575-780, 858-862, 865-869, 872-879, 882-888.